

CLAIMS

We claim:

1. A method performed in connection with a dispenser, the dispenser including a dispenser module movably mounted in supporting connection with an enclosure, wherein the dispenser module includes a holder enabling holding of medical items, wherein the dispenser module further includes a dispenser mechanism, wherein the dispenser mechanism is selectively operable to dispense medical items from the holder, the method comprising:

(a) moving the dispenser module, while mounted, from a first position, wherein the dispenser module is within the enclosure, to a second position, wherein the holder extends outside the enclosure;

(b) adding or removing at least one medical item from the holder while the holder extends outside the enclosure; and

(c) moving the dispenser module from the second position to the first position wherein the holder is within the enclosure.

2. The method according to claim 1 wherein the enclosure bounds an interior area, and wherein the enclosure includes an opening to the interior area, the dispenser includes a door in operative connection with the enclosure, wherein the door is movable between a closed position wherein the door closes the opening, and an open position wherein the door is disposed away from the opening, and further comprising:

prior to step (a) moving the door of the enclosure from a closed position to an open position, wherein the holder is able to be moved outside the enclosure; and

after step (c) closing the door.

3. The method according to claim 1 wherein step (b) comprises manually adding or removing at least one medical item from the holder.

4. The method according to claim 1 wherein the enclosure bounds an interior area, and wherein the enclosure includes an opening to the interior area, wherein the dispenser includes a door in operative connection with the enclosure, wherein the door is movable between a closed position wherein the door closes the opening, and an open position wherein the door is disposed away from the opening, the dispenser further includes a path extending in the enclosure, wherein the path is in connection with a delivery area, whereby medical items are accessible to a user in the delivery area, wherein the dispenser mechanism is selectively operable to dispense medical items from the holder at a dispense location, and wherein in the first position the dispenser module is within the enclosure and the dispense location is positioned adjacent the path, and wherein when the door is in the open position the dispenser module is movable to the second position, and wherein step (a) comprises moving the dispenser module from the first position to the second position wherein in the second position the dispenser module extends through the opening and the holder is manually accessible, and step (c) comprises moving the dispenser module from the second position to the first position, wherein the dispenser module is within the enclosure and the dispense location is positioned

adjacent the path.

5. The method according to claim 1 and wherein the dispenser module includes a helix rotating mechanism, and prior to step (b) further comprising:

- d) engaging a helix with the helix rotating mechanism, wherein the holder includes the helix;
- e) engaging a holder guide in operative connection with the dispenser module, wherein a first portion of the holder guide is extended in an inside area within the helix and a second portion of the holder guide extends in an exterior area outside of the helix.

6. The method according to claim 1 wherein the holder includes a pair of rotatable helixes, and wherein step (b) comprises placing a medical item in engagement with each of the helixes in the pair.

7. The method according to claim 1 wherein the dispenser module includes a reference surface, wherein the reference surface includes indicia thereon indicative of the number of medical items held in the holder, and prior to step (c) further comprising the step of:

reading the indicia on the reference surface.

8. The method according to claim 1 wherein the dispenser module includes a cover movably mounted thereon, wherein the cover is movable between a down position wherein the cover is in adjacent overlying relation relative to the holder, and an up position wherein the holder is manually accessible, and wherein the cover is prevented from moving to the up position when the dispenser module is in the first position, and further comprising after step (a) moving the cover to the up position and prior to step (c) moving the cover to the down position.

9. The method according to claim 1 wherein the holder includes a rotatable helix, wherein the helix includes an inside area bounded by the helix, and prior to step (c) further comprising the step of:

extending a limiting member in the inside area of the helix, wherein the limiting member is operative to prevent a medical item from passing through the inside area of the helix absent rotation of the helix.

10. The method according to claim 1 wherein the dispenser comprises a further dispenser module in the interior area thereof, and subsequent to step (c) in any order, further comprising the steps of:

- d) dispensing a first medical item including a supporting card from the dispenser module; and
- e) dispensing a second medical item including a generally cylindrical liquid holding container from the further dispenser module.

11. The method according to claim 1, and wherein step (b) comprises the steps of:
- providing the holder with a plurality of medical items arranged in a stack,
- wherein in the first position the medical items are biased to move by gravitational force;
- and
- providing a follower in engagement with the stack, wherein in the first position the follower provides additional biasing force on the stack.
12. The method according to claim 1, and wherein step (b) comprises the steps of:
- adding a plurality of medical items to the holder arranged in aligned side by side relation in a stack, wherein in the first position the medical items are biased to move by gravitational force towards a dispense location;
- providing a movably positionable guide extending adjacent the stack; and
- providing a generally cylindrical rotatably movable follower, including at least one annular groove, in operative engagement with the stack, wherein in the first position the follower provides additional biasing force on the stack, and wherein the guide extends in the at least one annular groove during rotational movement of the follower towards the dispense location.
13. A method performed in connection with a medical item dispenser, the dispenser including an enclosure, a door in operative connection with the enclosure, a path extending in the enclosure, wherein the path is in connection with a delivery area, whereby dispensed medical items are accessible to a user in the delivery area, the method comprising:

(a) providing a dispenser module movably mounted in supporting connection with the enclosure, wherein the dispenser module includes a holder enabling holding of medical items, and a dispenser mechanism selectively operable to dispense medical items from the holder at a dispense location positioned adjacent the path;

(b) moving the door of the enclosure from a closed position to an open position, wherein the holder is able to be moved outside the enclosure;

(c) moving the dispenser module while in supporting connection with the enclosure, from a first position, wherein the dispenser module is within the enclosure, to a second position, wherein the holder extends outside the enclosure;

(d) adding or removing at least one medical item from the holder while the holder extends outside the enclosure;

(e) moving the dispenser module from the second position to the first position wherein the holder is within the enclosure; and

(f) closing the door.

14. A method performed in connection with a medical item dispenser apparatus including:
an enclosure, wherein the enclosure bounds an interior area, and wherein the enclosure includes an opening to the interior area;

a door in operative connection with the enclosure, wherein the door is movable between a closed position wherein the door closes the opening, and an open position wherein the door is disposed away from the opening;

a path extending in the enclosure, wherein the path is in connection with a delivery area, whereby dispensed medical items are accessible to a user in the delivery area;

a dispenser module, wherein the dispenser module is movably mounted in supporting connection with the enclosure, wherein the dispenser module includes a holder, wherein the holder enables holding the medical items therein, and a dispenser mechanism, wherein the dispenser mechanism is selectively operable to dispense medical items from the holder at a dispense location, and wherein the module is movable while mounted in supporting connection with the enclosure between a first position and a second position, wherein in the first position the module is within the enclosure and the dispense location is positioned adjacent the path, and wherein when the door is in the open position the dispenser module is movable to the second position, wherein in the second position the module extends through the opening and the holder is manually accessible, whereby the medical items may be added or removed therefrom;

the method comprising:

- (a) moving the door from the closed position to the open position;
- (b) moving the mounted dispenser module from the first position to the second position, wherein the holder extends outside the enclosure;
- (c) adding or removing at least one medical item from the holder while the holder extends outside the enclosure;
- (d) moving the mounted dispenser module from the second position to the first position wherein the holder is within the interior area; and
- (e) closing the door.

15. The method according to claim 14 wherein step (c) comprises manually adding or removing at least one medical item from the holder.

16. The method according to claim 14 wherein the dispenser module includes a helix rotating mechanism, and prior to step (c) further comprising the steps of:

- f) engaging a helix with the helix rotating mechanism, wherein the holder includes the helix;
- g) engaging a holder guide in operative connection with the dispenser module, wherein a first portion of the holder guide is extended in an inside area within the helix and a second portion of the holder guide extends in an exterior area outside of the helix.

17. The method according to claim 14 wherein the holder includes a pair of rotatable helixes, and wherein step (c) comprises placing a medical item in engagement with each of the helixes in the pair.

18. The method according to claim 14 wherein the dispenser module includes a reference surface, wherein the reference surface includes indicia thereon indicative of numbers of medical items held in the holder, and prior to step (d) further comprising the step of:

reading the indicia on the reference surface.

19. The method according to claim 14 wherein the dispenser module includes a cover movably mounted thereon, wherein the cover is movable between a down position wherein the cover is in adjacent overlying relation relative to the holder, and an up position wherein the holder is manually accessible, and wherein the cover is prevented from moving to the up position when the dispenser module is in the first position, and further comprising after step (b) moving the cover to the up position and prior to step (d) moving the cover to the down position.

20. The method according to claim 14 wherein the holder includes a rotatable helix, wherein the helix includes an inside area bounded by the helix, and prior to step (d) further comprising the step of:

extending a limiting member in the inside area of the helix, wherein the limiting member is operative to prevent a medical item from passing through the inside area of the helix absent rotation of the helix.

21. The method according to claim 14 wherein the dispenser comprises a further dispenser module in the interior area thereof, and subsequent to step (e) in any order, further comprising the steps of:

- f) dispensing a first medical item including a supporting card from the dispenser module into the path; and
- g) dispensing a second medical item including a generally cylindrical liquid holding container from the further dispenser module into the path.

22. A method comprising:

- (a) providing an enclosure including a delivery area accessible from outside the enclosure;
- (b) providing a first dispenser module in the enclosure and in movably supporting connection with the enclosure through a first guide arrangement, wherein the first guide arrangement is adapted to guide the first dispenser module during movement, wherein the first dispenser module includes a plurality of first medical items and is selectively operative to dispense first medical items therefrom, wherein first medical items dispensed from the first dispenser module in the enclosure move to the delivery area;
- (c) providing a second dispenser module in the enclosure and in movably supporting connection with the enclosure through a second guide arrangement, wherein the second guide arrangement is adapted to guide the second dispenser module during movement, wherein the second and first guide arrangements are interchangeably engageable to support either the first or second dispenser modules, and wherein the second dispenser module includes a plurality of second medical items and is selectively operative to dispense the second medical items therefrom, wherein second medical items dispensed from the second dispenser module in the enclosure move to the delivery area; and
- (d) dispensing at least one of a first or second medical item to the delivery area.

23. The method according to claim 22 wherein each first medical item includes a supporting card and each second medical item includes a generally cylindrical liquid holding container, and wherein step (d) comprises

dispensing a first medical item including a supporting card from the first dispenser module; and dispensing a second medical item including a generally cylindrical liquid holding container from the second dispenser module.

24. The method according to claim 7 wherein the reference surface extends adjacent to the holder, and prior to step (c) comprising reading the indicia on the reference surface.

25. The method according to claim 7 wherein the indicia includes indicia spaced in aligned, side by side relation on the reference surface, wherein the spaced indicia corresponds to different medical item sizes, and prior to step (c) further comprising determining the number of medical items held in the holder.

26. The method according to claim 1 wherein the module includes a latching lever, wherein the enclosure includes a latching pin, and further comprising engaging the latching lever with the latching pin to hold the module in the first position.

27. The method according to claim 1 wherein the dispenser includes adjacent dispenser modules in the interior area thereof, and a door in operative connection with the enclosure, wherein each module is movable in a direction toward the door from a respective first position, wherein each of the dispenser modules has a respective dispense location, wherein with the modules in the first position each dispense location is in different proximity in the direction relative to an adjacent module, and subsequent to step (c) further comprising dispensing a

medical item with one of the dispenser modules.

28. The method according to claim 1 wherein the dispenser module includes a further holder, and subsequent to step (c) in any order, further comprising:

- d) dispensing a first medical item including a supporting card from the holder; and
- e) dispensing a second medical item including a generally cylindrical liquid holding container from the further holder.